

Environmental Science
GC/MS ANALYSIS OF BUD EXUDATE FROM POPULUS DELTOIDES, POPULUS
BALSAMIFERA, AND UNKNOWN RIPON POPULATION

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The purpose of this study was to determine whether an unknown group of trees was a hybrid of *Populus deltoides* (cottonwood) and *Populus balsamifera* (balsam poplar). Gas Chromatography / Mass Spectrometry (GC/MS) was used to analyze bud exudates from the suspected hybrid and compared to that of the suspected parents. There were few similarities in chemical composition between the suspected hybrid and the *P. deltoides* or *P. balsamifera*. All three species shared very few spectral features as well. Length/width ratios of the leaves and leaf base geometry between the petiole and the blade were measured. The length/width ratios put the suspected hybrid between the *P. deltoides* and the *P. balsamifera*, which is expected with hybrids and its parents. The leaf base geometry was consistent within the three species, but they did not match hypothesized expectations of a hybrid with its parents. As a result of these tests, we feel that the suspected hybrid may not be a hybrid between *P. deltoides* and *P. balsamifera*.